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# Engineering Outreach Education Through Social Media

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# ENGINEERING OUTREACH EDUCATION THROUGH SOCIAL MEDIA

Katie Meiergerd, Dagen Valentine, Jennifer Keshwani, Bradley Barker – Biological Systems Engineering

## Objective

The objective of this work is to identify ways to use social media to provide support to K – 12 educators interested in implementing engineering education with their students.

## Introduction

Familiarizing teachers and educators with Engineering and other related STEM fields is crucial in educating students, so ensuring teachers with access to these resources is important. Many resources have been developed to promote engineering in K-12, including WearTec (Figure 1 and 3) (Barker, 2015). Social media provides a large and diverse set of resources and tools in which teachers and educators can delve into and use. Providing aid and guidance with these resources through specific social media outputs can ease the process of finding resources for educators, as well as provide helpful suggestions for age group appropriate activities.

## Methods

Accounts were set up specifically to cater to teachers in several popular social media hubs to develop a structure for providing social media access to online teaching and activity resources. These include a Facebook page, as well as an active Twitter account under the name UNL4H\_WearTec. The following steps were taken to achieve this goal:

- Identified popular networking sites for social media output
- Identified consistent themes in which to post content.
- Planned scheduled posts using Hootsuite to cover these topics:
  - Lesson plans and activities
  - Interesting engineering content
  - Local engineering related events

## Progress

The accounts that were set up have consistently posted resource-related content over the course of several months. The accounts posted three times a week, sometimes more depending on local calendar events (Figure 2). Frequent posts included content from online Engineering or STEM related fields, which provided content to better understand the real-life applications that these fields relate to. Lesson plans from a variety of sources such as teachengineering.org were shared, providing educators with useful and engaging activities for their students.

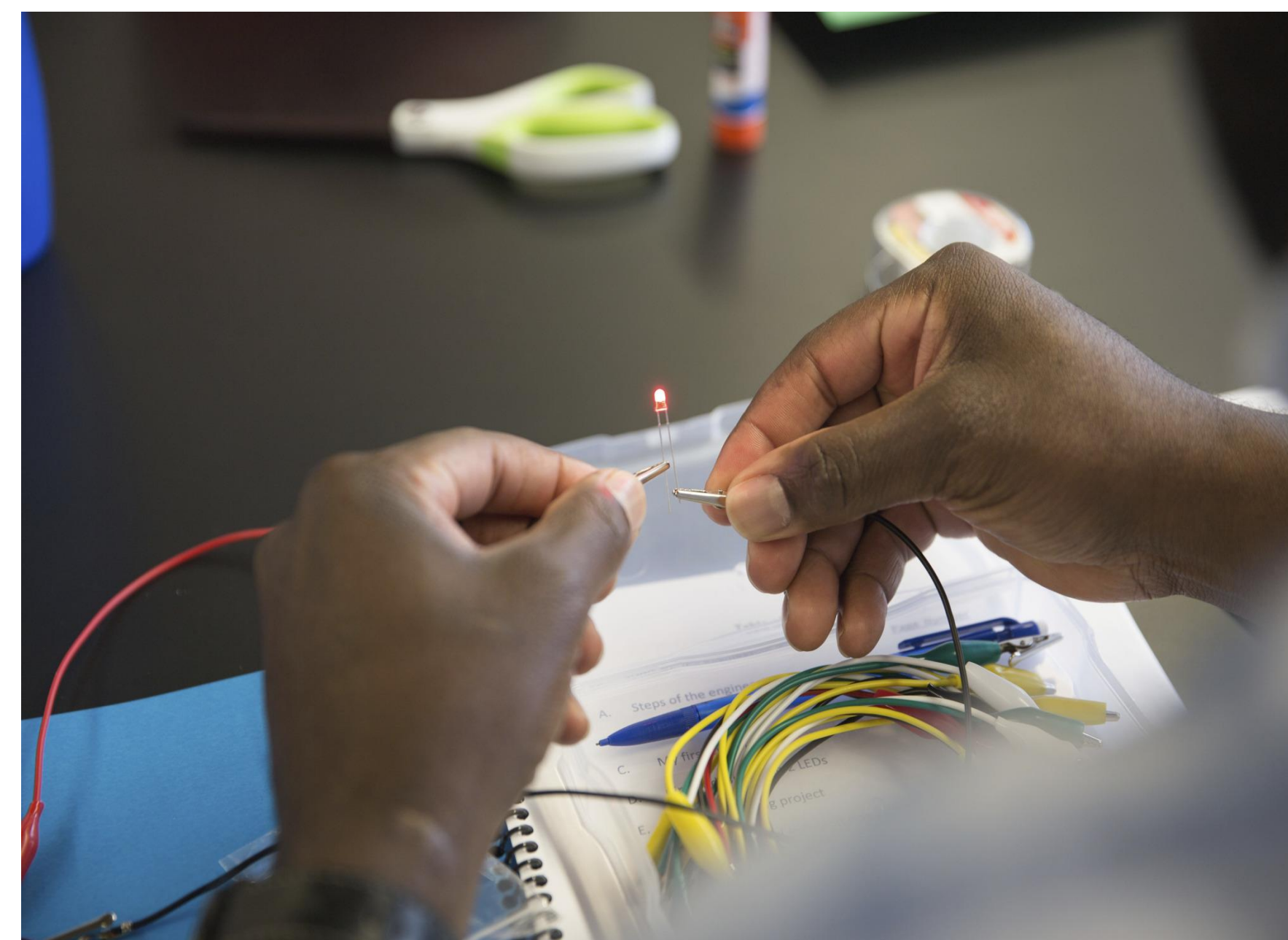


Figure 1: Testing educator activity

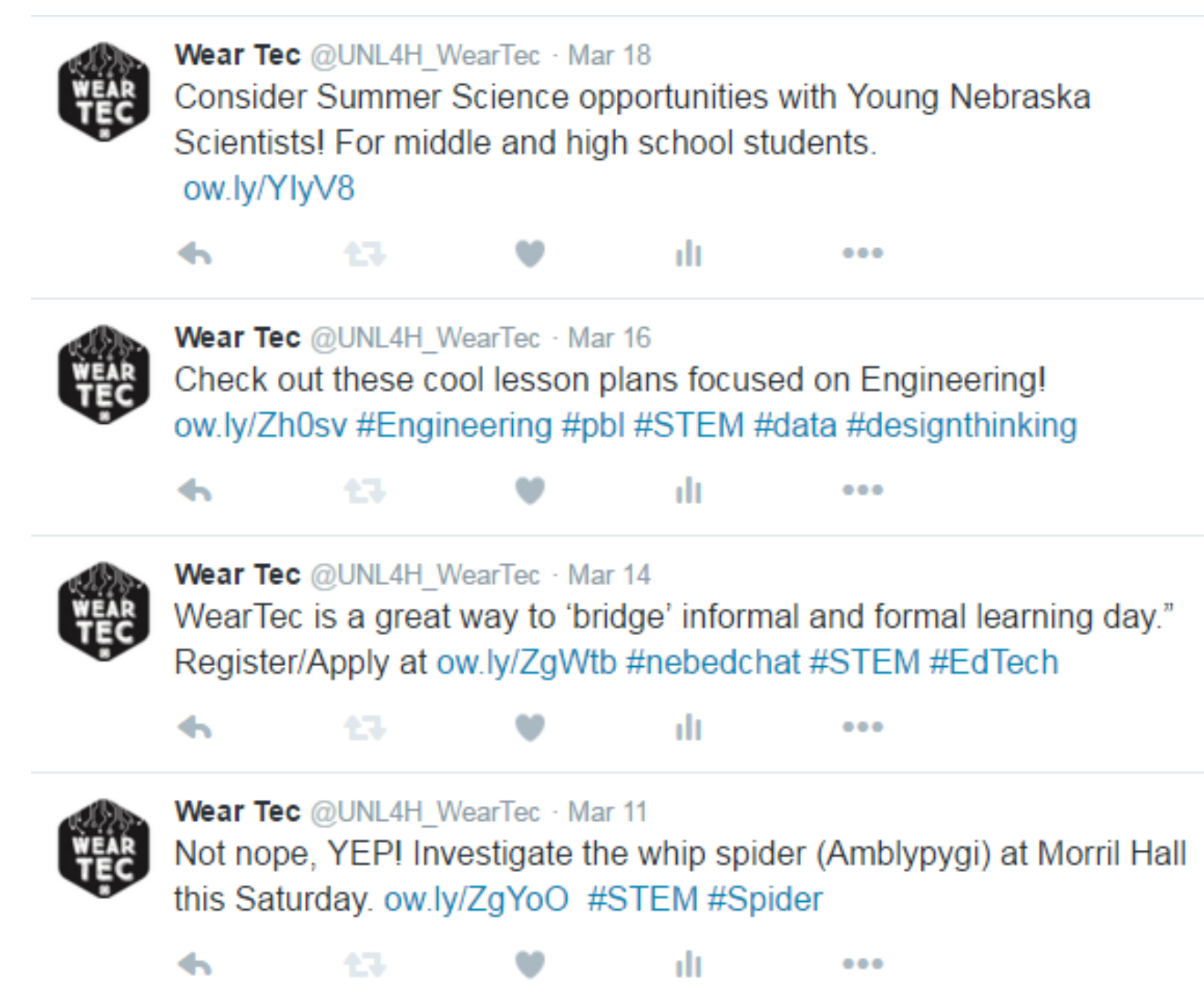


Figure 2: Example of tweets from the Twitter feed

Local events relating to engineering and STEM fields were also shared, sharing specific dates and locations to encourage teachers and educators to get involved in the community. Spreading the information was difficult, but new methods using website-specific topic tracking (such as hashtags on Twitter) has allowed the posts to show up in more areas of the website (Figure 4).

Your Tweets earned 889 impressions over this 31 day period

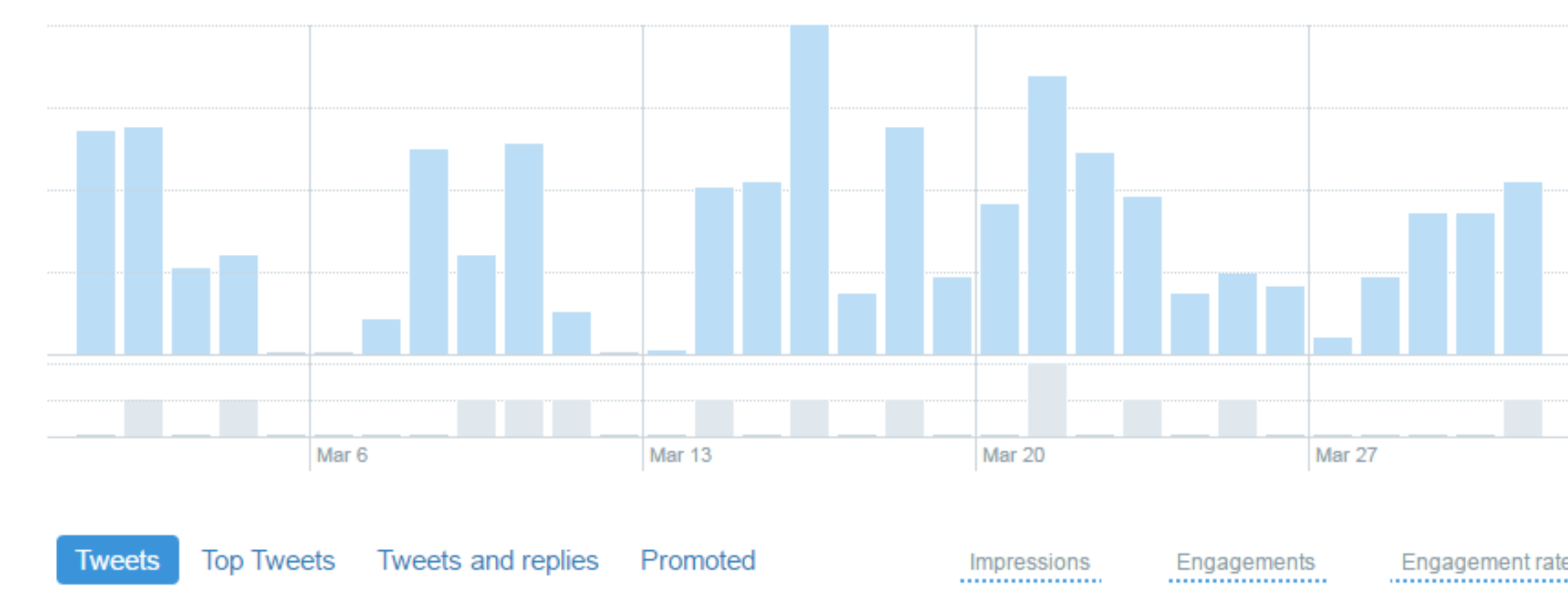


Figure 4: Twitter Impression Activity



Figure 3: WearTec activity

#STEM  
#EngineeringEd  
#EdTech



## Discussion

Setting up and creating a social media presence for this project was more challenging than originally anticipated. There were a lot of factors to be considered when dealing with social media outlets, since there were a variety of ways that could be used to approach it. Using a consistent system to post has worked well so far, and keeping with consistent themes for the content allowed for easier planning and queuing of engineering content.



Figure 5: UNL 'Sunday With the Scientists' demonstration

## Future Work

- Survey educators to determine social media needs related to both content and mode of communication.
- Utilize analytical tools such as Twitter analytics to assess effectiveness of various tweets and posts.
- Create more social media outlets as needed to accompany educators needs.

## References

- Barker, B., Melander, J., Grandgenett, N. & Nugent, G. (2015). Utilizing Wearable Technologies as a Pathway to STEM. In D. Slykhuis & G. Marks (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2015* (pp. 1770-1776). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).
- Kiney, J. (2010) Five Social Media Tools for the Extension Toolbox. *Journal of Extension* [Online], 48(5) Article 5TOT7.